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RECEIVED SEPTEMBER 29, 2008

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FLUOR

Memorandum

M4W41-SLF-08-1091

To:	H. Hampt	E6-35	Date:	September 29, 2008
From:	S. L. Fitzgerald, Manager WSCF Analytical Lab			

cc: w/Attachments

T. F. Dale	S3-30	P. D. Mix	S3-30
D. Felmy (PNNL)	K6-75	J. E. Trechter	S3-30
A. J. Kopriva	S3-30	S. J. Trent	E6-35
H. K. Meznarich	S3-30	File/LB	

Subject: FINAL RESULTS FOR SAMPLE DELIVERY GROUP WSCF20081860

Reference:
1) Letter of Instruction for Analytical Services for the Groundwater Performance Assessment Project and Analytical Laboratory Transition Plan, FH-0602422, September 19, 2006
2) HNF-SD-CD-QAPP-017, Rev. 9, Waste Sampling & Characterization Facility Quality Assurance Plan

This transmittal contains the following information for sample delivery group WSCF20081860:

- Cover Sheet (Attachment 1)
- Narrative (Attachment 2)
- Analytical Results (Attachment 3)
- Sample Receipt Information (Attachment 4)

SLF/grf

Attachments 4

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ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF NUMBER CROSS REFERENCE

Group#: WSCF20081860
Data Deliverable Date: 26-sep-2008
Data Deliverable: Cover Sheet

SAF#	Sample ID	WSCF#	Matrix
A08-007	B1W1D9	W08P004238	WATER
I08-053	B1WDW3 GP	W08P004245	WATER
W08-007	B1W2F4	W08P004239	WATER
	B1W2F5	W08P004240	WATER
	B1W2W8	W08P004241	WATER
	B1W2W9	W08P004242	WATER
	B1W361	W08P004243	WATER
	B1W362	W08P004244	WATER

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ATTACHMENT 2

NARRATIVE

Consisting of 4 pages
Including cover page

Introduction

Eight groundwater samples were received at the WSCF Laboratory on August 27, 2008. Samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Groundwater Remediation Program – Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving, indicating the presence of ice in the sample container.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report,* pages 14 through 16, for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See pages 26 through 30 for QC details. Analytical Note(s):

- Sample results were D flagged if dilution(s) were required.
- Duplicates, Matrix Spikes and Matrix Spike Duplicates were analyzed on samples B1WDW6 (SDG# 20081849) and B1W212 (SDG# 20081862).

All QC controls are within the established limits.

ICP-AES Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See pages 31 through 34 for QC details. Analytical Note(s):

- Sample results that were less than the reportable limit, however greater than the method detection limit, were B flagged.
- Calcium, Magnesium and Sodium sample concentrations exceeded spiking levels by a factor of 4. Spike recoveries are not valid. Check standard was analyzed to ensure linearity, because the sample results were greater than the calibration standard.

- Potassium – Laboratory Control Sample recovery exceeded established laboratory limits. Affected sample results were X flagged.

- Silver – Matrix Spike and Matrix Spike Duplicate recoveries were less than established laboratory limits. Affected sample results were N flagged.

All other QC controls are within the established limits.

ICP-MS Metals – The hold time requirements for this analysis were met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 35 for QC details. Analytical Note(s):

- Matrix Spikes and Matrix Spike Duplicates were analyzed on samples B1WDN1 (SDG# 20081849) and B1WDN7 (SDG# 20081887).

All QC controls are within the established limits.

Total Alkalinity – The hold time requirement for this analysis was met. A Duplicate and Laboratory Control Sample were analyzed with this delivery group per GRP Letter of Instruction. See page 36 for QC details. Analytical Note(s):

- Duplicates were analyzed on samples B1WPK0 (SDG# 20081861, SAF# F02-009) and B1WJR1 (SDG# 20081816).

All QC controls are within the established limits.

Total Organic Carbon – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Method Spike were analyzed with this delivery group per the GRP Letter of Instruction. See page 37 for QC details.

All QC controls are within the established limits.

Total Organic Halides – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group per the GRP Letter of Instruction. See page 38 for QC details. Analytical Note(s):

- Matrix Spikes, Matrix Spike Duplicates were analyzed on samples B1W2W8 of this SDG, B1X0P4 (SDG# 20081892) and B1X0X5 (SDG# 20081907).

- TOX – Due to a LABCORE "glitch", the time between the prep and the analysis is in error. Normally, the time between prep and analysis is approximately one hour before the first sample is analyzed in the batch. Refer to e-mails, dated 9/25/2008, from Jim Douglas and Gerald Ross, addressing this problem in LABCORE.

All QC controls are within the established limits.

Organic Comments

VOA – The hold time requirement for this analysis was met. A Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample, were analyzed with this delivery group per the GRP Letter of Instruction. See pages 42 through 44 for QC details. Analytical Note(s):

- Matrix Spike and Matrix Spike Duplicate were analyzed on sample# B1WMT9 (SDG# 20081832).
- Acetone and Methylene Chloride contamination detected in the Blank was evaluated and there was no affect on sample results.

All other QC controls are within the established limits.

Radiochemistry Comments

Rad Chem – There are no hold times associated with WSCF's radiochemical methods. A Duplicate, Matrix Spike, Blank and Laboratory Control Sample were analyzed with this delivery group. See pages 48 through 50 for QC details. Analytical Note(s):

- Strontium-89/09 and 85 (tracer) – Duplicate QC was analyzed on sample# B1WPW4 (SDG# 20081801).
- Technetium-99 – Duplicate and Matrix Spike were analyzed on sample# B1WDW7 (SDG# 20081849).
- Tritium – Duplicates and Matrix Spikes were analyzed on sample# B1W1H1 (SDG# 20081849).

All QC controls are within the established limits.

I certify that this data package is in compliance with the LOI, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager and Client Services as verified by the following signatures.

Scot L. Fitzgerald
WSCF Analytical Laboratory Manager

for
Pauline D. Mix
WSCF Client Services

M4W41-SLF-08-1091

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 43 pages
Including cover page

WSCF
ANALYTICAL RESULTS REPORT

for

GPAP
Richland, WA 99352

Attention: Steve Trent E6-35

Analytical: S. Fitzgerald 9/29/08

Client Services: P.D. Mix 9/29/2008

All results are reported on an "as received" basis unless otherwise noted in the comment section.

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Report#: WSCF20081860
Report Date: 26-sep-2008
Report WGPP/ver. 5.2
GPAP

w13qlog v4.2 26-sep-2008 07:39:45

Department: Inorganic

W13q Worklist/Batch/QC Report for Group# WSCF20081860

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
37810	2	38237	42608	BLANK		Anions by Ion Chromatography
37810	15	38237	42608	BLANK		Anions by Ion Chromatography
37810	27	38237	42608	BLANK		Anions by Ion Chromatography
37810	3	38237	42608	LCS		Anions by Ion Chromatography
37810	16	38237	42608	LCS		Anions by Ion Chromatography
37810	18	38237	42608	DUP	W08P004211	Anions by Ion Chromatography
37810	19	38237	42608	MS	W08P004211	Anions by Ion Chromatography
37810	21	38237	42608	MSD	W08P004211	Anions by Ion Chromatography
37810	21	38237	42608	SPK-RPD	W08P004211	Anions by Ion Chromatography
37810	5	38237	42608	DUP	W08P004225	Anions by Ion Chromatography
37810	6	38237	42608	MS	W08P004225	Anions by Ion Chromatography
37810	7	38237	42608	MSD	W08P004225	Anions by Ion Chromatography
37810	7	38237	42608	SPK-RPD	W08P004225	Anions by Ion Chromatography
37810	26	38237	42608	SAMPLE	W08P004240	Anions by Ion Chromatography
37830	2	38253	42625	BLANK		Anions by Ion Chromatography
37830	15	38253	42625	BLANK		Anions by Ion Chromatography
37830	24	38253	42625	BLANK		Anions by Ion Chromatography
37830	3	38253	42625	LCS		Anions by Ion Chromatography
37830	16	38253	42625	LCS		Anions by Ion Chromatography
37830	8	38253	42625	SAMPLE	W08P004245	Anions by Ion Chromatography
37830	5	38253	42625	DUP	W08P004248	Anions by Ion Chromatography
37830	6	38253	42625	MS	W08P004248	Anions by Ion Chromatography
37830	7	38253	42625	MSD	W08P004248	Anions by Ion Chromatography
37830	7	38253	42625	SPK-RPD	W08P004248	Anions by Ion Chromatography
37830	18	38253	42625	DUP	W08P004258	Anions by Ion Chromatography
37830	19	38253	42625	MS	W08P004258	Anions by Ion Chromatography
37830	21	38253	42625	MSD	W08P004258	Anions by Ion Chromatography
37830	21	38253	42625	SPK-RPD	W08P004258	Anions by Ion Chromatography
37901	1	38329	42748	LCS		Total Alkalinity as mg/L CaCO3
37901	13	38329	42748	LCS		Total Alkalinity as mg/L CaCO3
37901	24	38329	42748	LCS		Total Alkalinity as mg/L CaCO3
37901	36	38329	42748	LCS		Total Alkalinity as mg/L CaCO3
37901	44	38329	42748	LCS		Total Alkalinity as mg/L CaCO3
37901	26	38329	42748	DUP	W08GR03517	Total Alkalinity as mg/L CaCO3
37901	3	38329	42748	DUP	W08P004191	Total Alkalinity as mg/L CaCO3
37901	30	38329	42748	SAMPLE	W08P004240	Total Alkalinity as mg/L CaCO3
37956	1	38380	42797	BLANK		Total Organic Carbon
37956	2	38380	42797	METHSPIKE		Total Organic Carbon
37956	3	38380	42797	SPK-RSD		Total Organic Carbon
37956	4	38380	42797	MS	W08P004241	Total Organic Carbon
37956	5	38380	42797	MSD	W08P004241	Total Organic Carbon
37956	7	38380	42797	SAMPLE	W08P004241	Total Organic Carbon
37956	5	38380	42797	SPK-RPD	W08P004241	Total Organic Carbon
37956	8	38380	42797	SAMPLE	W08P004242	Total Organic Carbon
37956	9	38380	42797	SAMPLE	W08P004243	Total Organic Carbon
37956	10	38380	42797	SAMPLE	W08P004244	Total Organic Carbon
37946	1	38273	42802	BLANK		ICP Metals Analysis, Grd H20 P
37946	2	38273	42802	LCS		ICP Metals Analysis, Grd H20 P

37946	4	38273	42802	MS	W08P004239	ICP Metals Analysis, Grd H20 P
37946	5	38273	42802	MSD	W08P004239	ICP Metals Analysis, Grd H20 P
37946	3	38273	42802	SAMPLE	W08P004239	ICP Metals Analysis, Grd H20 P
37946	5	38273	42802	SPK-RPD	W08P004239	ICP Metals Analysis, Grd H20 P
37946	6	38273	42802	SAMPLE	W08P004240	ICP Metals Analysis, Grd H20 P
38030	1	38452	42858	BLANK		ICP-200.8 MS All possible meta
38030	2	38452	42858	BLANK		ICP-200.8 MS All possible meta
38030	3	38452	42858	LCS		ICP-200.8 MS All possible meta
38030	4	38452	42858	LCS		ICP-200.8 MS All possible meta
38030	6	38452	42858	MS	W08P004214	ICP-200.8 MS All possible meta
38030	7	38452	42858	MSD	W08P004214	ICP-200.8 MS All possible meta
38030	7	38452	42858	SPK-RPD	W08P004214	ICP-200.8 MS All possible meta
38030	42	38452	42858	SAMPLE	W08P004238	ICP-200.8 MS All possible meta
38030	43	38452	42858	SAMPLE	W08P004245	ICP-200.8 MS All possible meta
38030	9	38452	42858	MS	W08P004270	ICP-200.8 MS All possible meta
38030	10	38452	42858	MSD	W08P004270	ICP-200.8 MS All possible meta
38030	10	38452	42858	SPK-RPD	W08P004270	ICP-200.8 MS All possible meta
38044	1	38464	42873	BLANK		Total Organic Halides
38044	3	38464	42873	LCS		Total Organic Halides
38044	6	38464	42873	MS	W08P004241	Total Organic Halides
38044	7	38464	42873	MSD	W08P004241	Total Organic Halides
38044	5	38464	42873	SAMPLE	W08P004241	Total Organic Halides
38044	7	38464	42873	SPK-RPD	W08P004241	Total Organic Halides
38044	8	38464	42873	SAMPLE	W08P004242	Total Organic Halides
38044	9	38464	42873	SAMPLE	W08P004243	Total Organic Halides
38044	10	38464	42873	SAMPLE	W08P004244	Total Organic Halides
38044	12	38464	42873	MS	W08P004291	Total Organic Halides
38044	13	38464	42873	MSD	W08P004291	Total Organic Halides
38044	13	38464	42873	SPK-RPD	W08P004291	Total Organic Halides
38044	20	38464	42873	MS	W08P004315	Total Organic Halides
38044	21	38464	42873	MSD	W08P004315	Total Organic Halides
38044	21	38464	42873	SPK-RPD	W08P004315	Total Organic Halides

w13qlog v4.2 26-sep-2008 07:39:45

Department: Organic

W13q Worklist/Batch/QC Report for Group# WSCF20081860

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
			42944	BLANK		VOA Ground Water Protection
			42944	LCS		VOA Ground Water Protection
			42944	MS	W08P004198	VOA Ground Water Protection
			42944	MSD	W08P004198	VOA Ground Water Protection
			42944	SPK-RPD	W08P004198	VOA Ground Water Protection
			42944	SAMPLE	W08P004245	VOA Ground Water Protection
			42944	SURR	W08P004245	VOA Ground Water Protection

w13qlog v4.2 26-sep-2008 07:39:45

Department: Radiochemistry

W13q Worklist/Batch/QC Report for Group# WSCF20081860

WL#	S#	Batch	QC#	Tray Type	Sample#	Test
37951	1	38375	42807	BLANK		TC99 by Liquid Scin.
37951	4	38375	42807	LCS		TC99 by Liquid Scin.
37951	3	38375	42807	DUP	W08P004212	TC99 by Liquid Scin.
37951	2	38375	42807	MS	W08P004212	TC99 by Liquid Scin.
37951	12	38375	42807	SAMPLE	W08P004238	TC99 by Liquid Scin.
37951	13	38375	42807	SAMPLE	W08P004245	TC99 by Liquid Scin.
37950	1	38374	42894	BLANK		Tritium by Liq Sct column prep
37950	2	38374	42894	LCS		Tritium by Liq Sct column prep
37950	4	38374	42894	DUP	W08P004210	Tritium by Liq Sct column prep
37950	3	38374	42894	MS	W08P004210	Tritium by Liq Sct column prep
37950	12	38374	42894	SAMPLE	W08P004238	Tritium by Liq Sct column prep
37950	13	38374	42894	SAMPLE	W08P004245	Tritium by Liq Sct column prep
37998	1	38419	42915	BLANK		Strontium 89/90
37998	2	38419	42915	LCS		Strontium 89/90
37998	3	38419	42915	DUP	W08P004155	Strontium 89/90
37998	10	38419	42915	SAMPLE	W08P004245	Strontium 89/90
37998	11	38419	42915	SURR	W08P004245	Strontium 89/90

WSCF
METHOD REFERENCES REPORT

Department: Inorganic

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory or industry methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though the WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-344-406	LA-344-406: TOTAL ORGANIC CARBON (TOC) BASED ON SW-846	
	EPA SW-846 9060	TOTAL ORGANIC CARBON
	HEIS 9060_TOC	Total Organic Carbon
LA-505-411	LA-505-411: ELEMENTAL ANALYSIS BY INDUCTIVELY COUPLED PLASMA ATOMIC EMISSION SPE	
	HEIS 6010_METALS_ICP	Inductively Coupled Plasma-Atomic Emmision Spectrometry
LA-505-412	LA-505-412: DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY	
	EPA-600/R-94-111 200.8	DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY COUPLED PLAS
	HEIS 200.8_METALS_ICPMS	Inductively Coupled Plasma - Mass Spectrometry
	HEIS RADISOTOPES_ICPMS	Radioisotopes by ICP/MS
LA-523-444	LA-523-444: TOTAL ORGANIC HALIDES BASED ON SW-846 METHOD 9020B	
	EPA SW-846 9020B	TOTAL ORGANIC HALIDES (TOX)
	HEIS 9020_TOX	Total Organic Halides based on SW846 Method 9020B
LA-531-411	LA-531-411: ALKALINITY (TITRIMETRIC)	
	HEIS 2320B	Alkalinity
	Standard Methods 2320B	Alkalinity
LA-533-410	LA-533-410: ANION ANALYSIS BY ION CHROMATOGRAPHY	
	EPA-600/R-94-111 300.0	DETERMINATION OF INORGANIC ANIONS BY ION CHROMATOGRAPHY
	HEIS 300.0_ANIONS_IC	Determination of Inorganic Anions by Ion Chromatography

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at http://www2.rl.gov/phmc/as-dol.

WSCF
METHOD REFERENCES REPORT

Department: Organic

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory or industry methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though the WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-523-455	LA-523-455: VOLATILE SAMPLE ANALYSIS BY SW-846	
	EPA SW-846 8000B	DETERMINATIVE CHROMATOGRAPHIC SEPARATIONS
	EPA SW-846 8260B	VOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)
	HEIS 8260_VOA_GCMS	Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at http://www2.rl.gov/phmc/as-dol.

WSCF
METHOD REFERENCES REPORT

Department: Radiochemistry

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory or industry methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though the WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-508-415 LA-508-415: OPERATION OF THE PROTEAN 2-INCH ALPHA/BETA COUNTING SYSTEM FOR GROSS

HEIS	**ALPHA_GPC**	GROSS ALPHA GPC
HEIS	**BETA_GPC**	GROSS BETA GPC
HEIS	**SRTOT_SEP_PRECIP_GPC**	Strontium 89/90

LA-508-421 LA-508-421: OPERATION OF THE TRI-CARB MODEL 2500TR LIQUID SCINTILLATION ANALYZER

HEIS	**ALPHA_LSC**	A/B Liquid Scintilillation
HEIS	**BETA_LSC**	A/B Liquid Scintilallation
HEIS	**TC99_3MDSK_LSC**	TC99 by Liquid Scintillation
HEIS	**TRITIUM_EIE_LSC**	Tritium Liquid Scintillation

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at http://www2.rl.gov/phmc/as-dol.

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: A08-007
Sample # W08P004238
Client ID: B1W1D9 GPP-PNNL TRENT WSCF **Matrix:** WATER

Group #: WSCF20081860
Department: Inorganic
Sampled: 08/27/08
Received: 08/27/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP-200.8 MS All possible meta Prep											**09/15/08**
ICP-200.8 MS All possible meta											
Uranium	7440-61-1	LA-505-412		3.20	ug/L			1.00	0.0500		09/15/08

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

B - The analyte < the RDL but > = the IDL/MDL (inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.(org)

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-007
Sample # W08P004239
Client ID: B1W2F4 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081860
Department: Inorganic
Sampled: 08/27/08
Received: 08/27/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
ICP Metals Analysis, Grd H20 P Prep											**08/31/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	B	30.2	ug/L			1.00	25		09/10/08
Magnesium	7439-95-4	LA-505-411		1.78e+04	ug/L			1.00	50		09/10/08
Manganese	7439-96-5	LA-505-411	B	6.70	ug/L			1.00	4.0		09/10/08
Nickel	7440-02-0	LA-505-411	B	4.00	ug/L			1.00	4.0		09/10/08
Potassium	7440-09-7	LA-505-411	X	6.66e+03	ug/L			1.00	1.7e+02		09/10/08
Silver	7440-22-4	LA-505-411	BN	9.10	ug/L			1.00	5.0		09/10/08
Sodium	7440-23-5	LA-505-411		3.32e+04	ug/L			1.00	51		09/10/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		09/10/08
Barium	7440-39-3	LA-505-411		63.3	ug/L			1.00	4.0		09/10/08
Cadmium	7440-43-9	LA-505-411	B	4.30	ug/L			1.00	4.0		09/10/08
Chromium	7440-47-3	LA-505-411	U	< 13.0	ug/L			1.00	13		09/10/08
Cobalt	7440-48-4	LA-505-411	B	6.50	ug/L			1.00	4.0		09/10/08
Copper	7440-50-8	LA-505-411	B	8.30	ug/L			1.00	6.0		09/10/08
Vanadium	7440-62-2	LA-505-411	B	28.3	ug/L			1.00	12		09/10/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		09/10/08
Calcium	7440-70-2	LA-505-411		5.89e+04	ug/L			1.00	73		09/10/08
Strontium	7440-24-6	LA-505-411		315	ug/L			1.00	4.0		09/10/08
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/10/08

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

B - The analyte < the RDL but >= the IDL/MDL (inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.(org)

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-007
Sample # W08P004240
Client ID: B1W2F5 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081860
Department: Inorganic
Sampled: 08/27/08
Received: 08/27/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Anions by Ion Chromatography											
Fluoride	16984-48-8	LA-533-410	D	0.387	mg/L			2.00	0.046		08/27/08
Chloride	16887-00-6	LA-533-410	D	16.3	mg/L			2.00	0.094		08/27/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0256	mg/L			2.00	0.026		08/27/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	28.4	mg/L			10.00	0.12		08/27/08
Sulfate	14808-79-8	LA-533-410	D	34.9	mg/L			2.00	0.26		08/27/08
ICP Metals Analysis, Grd H20 P Prep											**08/31/08**
ICP Metals Analysis, Grd H20 P											
Iron	7439-89-6	LA-505-411	U	< 25.0	ug/L			1.00	25		09/10/08
Magnesium	7439-95-4	LA-505-411		1.73e+04	ug/L			1.00	50		09/10/08
Manganese	7439-96-5	LA-505-411	B	5.40	ug/L			1.00	4.0		09/10/08
Nickel	7440-02-0	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/10/08
Potassium	7440-09-7	LA-505-411	X	6.29e+03	ug/L			1.00	1.7e+02		09/10/08
Silver	7440-22-4	LA-505-411	NU	< 5.00	ug/L			1.00	5.0		09/10/08
Sodium	7440-23-5	LA-505-411		3.23e+04	ug/L			1.00	51		09/10/08
Antimony	7440-36-0	LA-505-411	U	< 56.0	ug/L			1.00	56		09/10/08
Barium	7440-39-3	LA-505-411		60.9	ug/L			1.00	4.0		09/10/08
Cadmium	7440-43-9	LA-505-411	B	4.50	ug/L			1.00	4.0		09/10/08
Chromium	7440-47-3	LA-505-411	B	19.8	ug/L			1.00	13		09/10/08
Cobalt	7440-48-4	LA-505-411	B	5.70	ug/L			1.00	4.0		09/10/08
Copper	7440-50-8	LA-505-411	U	< 6.00	ug/L			1.00	6.0		09/10/08
Vanadium	7440-62-2	LA-505-411	B	25.6	ug/L			1.00	12		09/10/08
Zinc	7440-66-6	LA-505-411	U	< 9.00	ug/L			1.00	9.0		09/10/08
Calcium	7440-70-2	LA-505-411		5.84e+04	ug/L			1.00	73		09/10/08
Strontium	7440-24-6	LA-505-411		302	ug/L			1.00	4.0		09/10/08

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

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N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.(org)

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-007
Sample # W08P004240
Client ID: B1W2F5 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081860
Department: Inorganic
Sampled: 08/27/08
Received: 08/27/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Beryllium	7440-41-7	LA-505-411	U	< 4.00	ug/L			1.00	4.0		09/10/08
Total Alkalinity as mg/L CaCO3											
Total Alkalinity as mg/L CaCO3	ALKALINITY	LA-531-411		100	mg/L			1.00	1.0		09/03/08

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

B - The analyte < the RDL but > = the IDL/MDL (inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.(org)

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-007
Sample # W08P004241
Client ID: B1W2W8 GPP WSCF TRENT **Matrix:** WATER

Group #: WSCF20081860
Department: Inorganic
Sampled: 08/27/08
Received: 08/27/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Total Organic Halides Prep											**09/08/08**
Total Organic Halides											
Total Organic Halides	59473-04-0	LA-523-444		20.0	ug/L			1.00	5.0		09/15/08
Total organic carbon											
Total organic carbon	TOC	LA-344-406		0.370	mg/L			1.00	0.30		09/10/08

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor

B - The analyte < the RDL but > = the IDL/MDL (inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.(org)

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-007
Sample # W08P004242
Client ID: B1W2W9 GPP-PNNL TRENT WSCF **Matrix:** WATER

Group #: WSCF20081860
Department: Inorganic
Sampled: 08/27/08
Received: 08/27/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Total Organic Halides Prep											**09/08/08**
Total Organic Halides											
Total Organic Halides	59473-04-0	LA-523-444		19.2	ug/L			1.00	5.0		09/15/08
Total organic carbon											
Total organic carbon	TOC	LA-344-406		0.383	mg/L			1.00	0.30		09/10/08

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

B - The analyte < the RDL but > = the IDL/MDL (inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.(org)

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-007
Sample # W08P004243
Client ID: B1W361 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081860
Department: Inorganic
Sampled: 08/27/08
Received: 08/27/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Total Organic Halides Prep											**09/08/08**
Total Organic Halides											
Total Organic Halides	59473-04-0	LA-523-444		18.8	ug/L			1.00	5.0		09/15/08
Total organic carbon											
Total organic carbon	TOC	LA-344-406		0.384	mg/L			1.00	0.30		09/10/08

MDL = Minimum Detection Limit
RQ = Result Qualifier
TP Err = Total Propagated Error
DF = Dilution Factor

B - The analyte < the RDL but > = the MDL/MDL (inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: W08-007
Sample # W08P004244
Client ID: B1W362 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081860
Department: Inorganic
Sampled: 08/27/08
Received: 08/27/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Total Organic Halides Prep											**09/08/08**
Total Organic Halides											
Total Organic Halides	59473-04-0	LA-523-444		19.2	ug/L			1.00	5.0		09/15/08
Total organic carbon											
Total organic carbon	TOC	LA-344-406		0.372	mg/L			1.00	0.30		09/10/08

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

B - The analyte < the RDL but > = the IDL/MDL (inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.(org)

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-053
Sample # W08P004245
Client ID: B1WDW3 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081860
Department: Inorganic
Sampled: 08/27/08
Received: 08/27/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Anions by Ion Chromatography											
Fluoride	16984-48-8	LA-533-410	DU	< 0.0696	mg/L			3.00	0.070		08/28/08
Chloride	16887-00-6	LA-533-410	D	38.8	mg/L			3.00	0.14		08/28/08
Nitrogen in Nitrite	NO2-N	LA-533-410	DU	< 0.0384	mg/L			3.00	0.038		08/28/08
Nitrogen in Nitrate	NO3-N	LA-533-410	D	0.772	mg/L			3.00	0.036		08/28/08
Sulfate	14808-79-8	LA-533-410	D	179	mg/L			3.00	0.40		08/28/08
ICP-200.8 MS All possible meta Prep											**09/15/08**
ICP-200.8 MS All possible meta											
Uranium	7440-61-1	LA-505-412	U	< 0.0500	ug/L			1.00	0.0500		09/15/08

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

B - The analyte < the RDL but >= the IDL/MDL (inorg)
N - Spike sample recovery is outside control limits.(Inorg)
U - Analyzed for but not detected above limiting criteria.(org)

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

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WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081860
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 08/26/08
Receive Date:08/26/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P004211											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Chloride	16887-00-6	7.7325		RPD			0.689	20.000		08/27/08
DUP	Fluoride	16984-48-8	0.3497		RPD			1.702	20.000		08/27/08
DUP	Nitrogen in Nitrite	NO2-N	<2.56e-2		RPD			n/a	20.000	U	08/27/08
DUP	Nitrogen in Nitrate	NO3-N	4.5692		RPD			0.445	20.000		08/27/08
DUP	Sulfate	14808-79-8	21.1357		RPD			0.960	20.000		08/27/08
MS	Chloride	16887-00-6	1.01355	101.864	% Recov	80.000	120.000				08/27/08
MS	Fluoride	16984-48-8	0.48475	98.327	% Recov	80.000	120.000				08/27/08
MS	Nitrogen in Nitrite	NO2-N	0.46025	93.547	% Recov	80.000	120.000				08/27/08
MS	Nitrogen in Nitrate	NO3-N	0.39305	88.128	% Recov	80.000	120.000				08/27/08
MS	Sulfate	14808-79-8	1.72905	88.217	% Recov	80.000	120.000				08/27/08
MSD	Chloride	16887-00-6	0.971	97.588	% Recov	80.000	120.000				08/27/08
MSD	Fluoride	16984-48-8	0.4864	98.661	% Recov	80.000	120.000				08/27/08
MSD	Nitrogen in Nitrite	NO2-N	0.45845	93.181	% Recov	80.000	120.000				08/27/08
MSD	Nitrogen in Nitrate	NO3-N	0.4136	92.735	% Recov	80.000	120.000				08/27/08
MSD	Sulfate	14808-79-8	1.80195	91.936	% Recov	80.000	120.000				08/27/08
SPK-RPD	Chloride	16887-00-6	97.588		RPD			4.288	20.000		08/27/08
SPK-RPD	Fluoride	16984-48-8	98.661		RPD			0.339	20.000		08/27/08
SPK-RPD	Nitrogen in Nitrite	NO2-N	93.181		RPD			0.392	20.000		08/27/08
SPK-RPD	Nitrogen in Nitrate	NO3-N	92.735		RPD			5.094	20.000		08/27/08
SPK-RPD	Sulfate	14808-79-8	91.936		RPD			4.129	20.000		08/27/08
Lab ID: W08P004225											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Chloride	16887-00-6	7.3066		RPD			0.991	20.000		08/27/08
DUP	Fluoride	16984-48-8	0.1624		RPD			29.725	20.000 *		08/27/08
DUP	Nitrogen in Nitrite	NO2-N	<2.56e-2		RPD			n/a	20.000	U	08/27/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081860
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 08/26/08
Receive Date:08/26/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
DUP	Nitrogen in Nitrate	NO3-N	4.0498		RPD			0.265	20.000		08/27/08
DUP	Sulfate	14808-79-8	38.6424		RPD			0.874	20.000		08/27/08
MS	Chloride	16887-00-6	1.02705	103.221	% Recov	80.000	120.000				08/27/08
MS	Fluoride	16984-48-8	0.4885	99.087	% Recov	80.000	120.000				08/27/08
MS	Nitrogen in Nitrite	NO2-N	0.45055	91.575	% Recov	80.000	120.000				08/27/08
MS	Nitrogen in Nitrate	NO3-N	0.4147	92.982	% Recov	80.000	120.000				08/27/08
MS	Sulfate	14808-79-8	1.69865	86.666	% Recov	80.000	120.000				08/27/08
MSD	Chloride	16887-00-6	0.9943	99.930	% Recov	80.000	120.000				08/27/08
MSD	Fluoride	16984-48-8	0.4872	98.824	% Recov	80.000	120.000				08/27/08
MSD	Nitrogen in Nitrite	NO2-N	0.4513	91.728	% Recov	80.000	120.000				08/27/08
MSD	Nitrogen in Nitrate	NO3-N	0.4246	95.202	% Recov	80.000	120.000				08/27/08
MSD	Sulfate	14808-79-8	1.73275	88.406	% Recov	80.000	120.000				08/27/08
SPK-RPD	Chloride	16887-00-6	99.930		RPD			3.240	20.000		08/27/08
SPK-RPD	Fluoride	16984-48-8	98.824		RPD			0.266	20.000		08/27/08
SPK-RPD	Nitrogen in Nitrite	NO2-N	91.728		RPD			0.167	20.000		08/27/08
SPK-RPD	Nitrogen in Nitrate	NO3-N	95.202		RPD			2.359	20.000		08/27/08
SPK-RPD	Sulfate	14808-79-8	88.406		RPD			1.988	20.000		08/27/08

BATCH QC

BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	08/27/08
BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	08/27/08
BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	08/27/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	08/27/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	08/27/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	08/27/08
BLANK	Nitrogen in Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	08/27/08
BLANK	Nitrogen in Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	08/27/08
BLANK	Nitrogen in Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	08/27/08
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	08/27/08
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	08/27/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081860
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	08/27/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	08/27/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	08/27/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	08/27/08
LCS	Chloride	16887-00-6	193.8755	96.455	% Recov	80.000	120.000				08/27/08
LCS	Chloride	16887-00-6	193.8852	96.460	% Recov	80.000	120.000				08/27/08
LCS	Fluoride	16984-48-8	102.0999	102.510	% Recov	80.000	120.000				08/27/08
LCS	Fluoride	16984-48-8	102.1038	102.514	% Recov	80.000	120.000				08/27/08
LCS	Nitrogen in Nitrite	NO2-N	98.4101	99.004	% Recov	80.000	120.000				08/27/08
LCS	Nitrogen in Nitrite	NO2-N	98.8854	99.482	% Recov	80.000	120.000				08/27/08
LCS	Nitrogen in Nitrate	NO3-N	91.4215	101.467	% Recov	80.000	120.000				08/27/08
LCS	Nitrogen in Nitrate	NO3-N	91.858	101.951	% Recov	80.000	120.000				08/27/08
LCS	Sulfate	14808-79-8	384.8673	97.189	% Recov	80.000	120.000				08/27/08
LCS	Sulfate	14808-79-8	385.1601	97.263	% Recov	80.000	120.000				08/27/08

Lab ID: W08P004248
BATCH QC ASSOCIATED WITH SAMPLE

DUP	Chloride	16887-00-6	<9.38e-2		RPD			n/a	20.000	U	08/28/08
DUP	Fluoride	16984-48-8	<4.64e-2		RPD			n/a	20.000	U	08/28/08
DUP	Nitrogen in Nitrite	NO2-N	<2.56e-2		RPD			n/a	20.000	U	08/28/08
DUP	Nitrogen in Nitrate	NO3-N	<2.42e-2		RPD			n/a	20.000	U	08/28/08
DUP	Sulfate	14808-79-8	<0.264		RPD			n/a	20.000	U	08/28/08
MS	Chloride	16887-00-6	0.95975	96.457	% Recov	80.000	120.000				08/28/08
MS	Fluoride	16984-48-8	0.4133	83.834	% Recov	80.000	120.000				08/28/08
MS	Nitrogen in Nitrite	NO2-N	0.46795	95.112	% Recov	80.000	120.000				08/28/08
MS	Nitrogen in Nitrate	NO3-N	0.4484	100.538	% Recov	80.000	120.000				08/28/08
MS	Sulfate	14808-79-8	1.8979	96.832	% Recov	80.000	120.000				08/28/08
MSD	Chloride	16887-00-6	0.9649	96.975	% Recov	80.000	120.000				08/28/08
MSD	Fluoride	16984-48-8	0.4076	82.677	% Recov	80.000	120.000				08/28/08
MSD	Nitrogen in Nitrite	NO2-N	0.45955	93.404	% Recov	80.000	120.000				08/28/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081860
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 08/27/08
Receive Date:08/27/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MSD	Nitrogen in Nitrate	NO3-N	0.46065	103.285	% Recov	80.000	120.000				08/28/08
MSD	Sulfate	14808-79-8	1.8742	95.622	% Recov	80.000	120.000				08/28/08
SPK-RPD	Chloride	16887-00-6	96.975		RPD			0.536	20.000		08/28/08
SPK-RPD	Fluoride	16984-48-8	82.677		RPD			1.390	20.000		08/28/08
SPK-RPD	Nitrogen in Nitrite	NO2-N	93.404		RPD			1.812	20.000		08/28/08
SPK-RPD	Nitrogen in Nitrate	NO3-N	103.285		RPD			2.695	20.000		08/28/08
SPK-RPD	Sulfate	14808-79-8	95.622		RPD			1.257	20.000		08/28/08

Lab ID: W08P004258
BATCH QC ASSOCIATED WITH SAMPLE

DUP	Chloride	16887-00-6	14.8355		RPD			1.078	20.000		08/28/08
DUP	Fluoride	16984-48-8	0.2189		RPD			15.001	20.000		08/28/08
DUP	Nitrogen in Nitrite	NO2-N	<2.56e-2		RPD			n/a	20.000	U	08/28/08
DUP	Nitrogen in Nitrate	NO3-N	9.8772		RPD			0.061	20.000		08/28/08
DUP	Sulfate	14808-79-8	101.244		RPD			0.262	20.000		08/28/08
MS	Chloride	16887-00-6	0.93451	93.921	% Recov	80.000	120.000				08/28/08
MS	Fluoride	16984-48-8	0.5257	106.633	% Recov	80.000	120.000				08/28/08
MS	Nitrogen in Nitrite	NO2-N	0.40105	81.514	% Recov	80.000	120.000				08/28/08
MS	Nitrogen in Nitrate	NO3-N	0.41473	92.989	% Recov	80.000	120.000				08/28/08
MS	Sulfate	14808-79-8	1.64529	83.943	% Recov	80.000	120.000				08/28/08
MSD	Chloride	16887-00-6	0.93289	93.758	% Recov	80.000	120.000				08/28/08
MSD	Fluoride	16984-48-8	0.54085	109.706	% Recov	80.000	120.000				08/28/08
MSD	Nitrogen in Nitrite	NO2-N	0.50555	102.754	% Recov	80.000	120.000				08/28/08
MSD	Nitrogen in Nitrate	NO3-N	0.41778	93.673	% Recov	80.000	120.000				08/28/08
MSD	Sulfate	14808-79-8	1.66983	85.195	% Recov	80.000	120.000				08/28/08
SPK-RPD	Chloride	16887-00-6	93.758		RPD			0.174	20.000		08/28/08
SPK-RPD	Fluoride	16984-48-8	109.706		RPD			2.841	20.000		08/28/08
SPK-RPD	Nitrogen in Nitrite	NO2-N	102.754		RPD			23.053	20.000	*	08/28/08
SPK-RPD	Nitrogen in Nitrate	NO3-N	93.673		RPD			0.733	20.000		08/28/08
SPK-RPD	Sulfate	14808-79-8	85.195		RPD			1.480	20.000		08/28/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081860
Matrix: WATER
Test: Anions by Ion Chromatography

Sample Date: 08/27/08
Receive Date:08/27/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BATCH QC											
BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	08/28/08
BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	08/28/08
BLANK	Chloride	16887-00-6	<4.69e-2	n/a	mg/L	0.000	0.030			U	08/28/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	08/28/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	08/28/08
BLANK	Fluoride	16984-48-8	<2.32e-2	n/a	mg/L	0.000	0.030			U	08/28/08
BLANK	Nitrogen in Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	08/28/08
BLANK	Nitrogen in Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	08/28/08
BLANK	Nitrogen in Nitrite	NO2-N	<1.28e-2	n/a	mg/L	0.000	0.020			U	08/28/08
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	08/28/08
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	08/28/08
BLANK	Nitrogen in Nitrate	NO3-N	<1.21e-2	n/a	mg/L	0.000	0.040			U	08/28/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	08/28/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	08/28/08
BLANK	Sulfate	14808-79-8	<0.132	n/a	mg/L	0.000	0.200			U	08/28/08
LCS	Chloride	16887-00-6	197.2584	98.139	% Recov	80.000	120.000				08/28/08
LCS	Chloride	16887-00-6	201.9437	100.470	% Recov	80.000	120.000				08/28/08
LCS	Fluoride	16984-48-8	102.4666	102.878	% Recov	80.000	120.000				08/28/08
LCS	Fluoride	16984-48-8	106.5366	106.964	% Recov	80.000	120.000				08/28/08
LCS	Nitrogen in Nitrite	NO2-N	95.6675	96.245	% Recov	80.000	120.000				08/28/08
LCS	Nitrogen in Nitrite	NO2-N	98.4047	98.999	% Recov	80.000	120.000				08/28/08
LCS	Nitrogen in Nitrate	NO3-N	92.5346	102.702	% Recov	80.000	120.000				08/28/08
LCS	Nitrogen in Nitrate	NO3-N	92.8567	103.060	% Recov	80.000	120.000				08/28/08
LCS	Sulfate	14808-79-8	392.2316	99.048	% Recov	80.000	120.000				08/28/08
LCS	Sulfate	14808-79-8	390.9893	98.735	% Recov	80.000	120.000				08/28/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081860
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 08/27/08
Receive Date:08/27/08

Lab ID: W08P004239
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MS	Silver	7440-22-4	172.5	17.250	% Recov	75.000	125.000			•	09/10/08
MS	Barium	7440-39-3	503	100.600	% Recov	75.000	125.000				09/10/08
MS	Beryllium	7440-41-7	528.3	105.660	% Recov	75.000	125.000				09/10/08
MS	Calcium	7440-70-2	-1630	-163.000	% Recov	75.000	125.000			•	09/10/08
MS	Cadmium	7440-43-9	1068.7	106.870	% Recov	75.000	125.000				09/10/08
MS	Cobalt	7440-48-4	1010.5	101.050	% Recov	75.000	125.000				09/10/08
MS	Chromium	7440-47-3	1032	103.200	% Recov	75.000	125.000				09/10/08
MS	Copper	7440-50-8	1048.7	104.870	% Recov	75.000	125.000				09/10/08
MS	Iron	7439-89-6	999.8	99.980	% Recov	75.000	125.000				09/10/08
MS	Potassium	7440-09-7	12016	120.160	% Recov	75.000	125.000				09/10/08
MS	Magnesium	7439-95-4	660	66.000	% Recov	75.000	125.000			•	09/10/08
MS	Manganese	7439-96-5	1047.3	104.730	% Recov	75.000	125.000				09/10/08
MS	Sodium	7440-23-5	870	87.000	% Recov	75.000	125.000				09/10/08
MS	Nickel	7440-02-0	1020	102.000	% Recov	75.000	125.000				09/10/08
MS	Antimony	7440-36-0	1029	102.900	% Recov	75.000	125.000				09/10/08
MS	Strontium	7440-24-6	540.7	108.140	% Recov	75.000	125.000				09/10/08
MS	Vanadium	7440-62-2	1011.7	101.170	% Recov	75.000	125.000				09/10/08
MS	Zinc	7440-66-6	1134	113.400	% Recov	75.000	125.000				09/10/08
MSD	Silver	7440-22-4	179.5	17.950	% Recov	75.000	125.000			•	09/10/08
MSD	Barium	7440-39-3	497.5	99.500	% Recov	75.000	125.000				09/10/08
MSD	Beryllium	7440-41-7	530	106.000	% Recov	75.000	125.000				09/10/08
MSD	Calcium	7440-70-2	540	54.000	% Recov	75.000	125.000			•	09/10/08
MSD	Cadmium	7440-43-9	1081.7	108.170	% Recov	75.000	125.000				09/10/08
MSD	Cobalt	7440-48-4	1029.5	102.950	% Recov	75.000	125.000				09/10/08
MSD	Chromium	7440-47-3	1042	104.200	% Recov	75.000	125.000				09/10/08
MSD	Copper	7440-50-8	1029.7	102.970	% Recov	75.000	125.000				09/10/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081860
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date: 08/27/08
Receive Date:08/27/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MSD	Iron	7439-89-6	1005.8	100.580	% Recov	75.000	125.000				09/10/08
MSD	Potassium	7440-09-7	11996	119.960	% Recov	75.000	125.000				09/10/08
MSD	Magnesium	7439-95-4	740	74.000	% Recov	75.000	125.000				09/10/08
MSD	Manganese	7439-96-5	1055.3	105.530	% Recov	75.000	125.000				09/10/08
MSD	Sodium	7440-23-5	1000	100.000	% Recov	75.000	125.000				09/10/08
MSD	Nickel	7440-02-0	1034	103.400	% Recov	75.000	125.000				09/10/08
MSD	Antimony	7440-36-0	1058	105.800	% Recov	75.000	125.000				09/10/08
MSD	Strontium	7440-24-6	535	107.000	% Recov	75.000	125.000				09/10/08
MSD	Vanadium	7440-62-2	1020.7	102.070	% Recov	75.000	125.000				09/10/08
MSD	Zinc	7440-66-6	1138	113.800	% Recov	75.000	125.000				09/10/08
SPK-RPD	Silver	7440-22-4	17.950		RPD			3.977	20.000		09/10/08
SPK-RPD	Barium	7440-39-3	99.500		RPD			1.099	20.000		09/10/08
SPK-RPD	Beryllium	7440-41-7	106.000		RPD			0.321	20.000		09/10/08
SPK-RPD	Calcium	7440-70-2	54.000		RPD			-398.165	20.000	*	09/10/08
SPK-RPD	Cadmium	7440-43-9	108.170		RPD			1.209	20.000		09/10/08
SPK-RPD	Cobalt	7440-48-4	102.950		RPD			1.863	20.000		09/10/08
SPK-RPD	Chromium	7440-47-3	104.200		RPD			0.964	20.000		09/10/08
SPK-RPD	Copper	7440-50-8	102.970		RPD			1.828	20.000		09/10/08
SPK-RPD	Iron	7439-89-6	100.580		RPD			0.598	20.000		09/10/08
SPK-RPD	Potassium	7440-09-7	119.960		RPD			0.167	20.000		09/10/08
SPK-RPD	Magnesium	7439-95-4	74.000		RPD			11.429	20.000		09/10/08
SPK-RPD	Manganese	7439-96-5	105.530		RPD			0.761	20.000		09/10/08
SPK-RPD	Sodium	7440-23-5	100.000		RPD			13.904	20.000		09/10/08
SPK-RPD	Nickel	7440-02-0	103.400		RPD			1.363	20.000		09/10/08
SPK-RPD	Antimony	7440-36-0	105.800		RPD			2.779	20.000		09/10/08
SPK-RPD	Strontium	7440-24-6	107.000		RPD			1.060	20.000		09/10/08
SPK-RPD	Vanadium	7440-62-2	102.070		RPD			0.886	20.000		09/10/08
SPK-RPD	Zinc	7440-66-6	113.800		RPD			0.352	20.000		09/10/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081860
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BATCH QC											
BLANK	Silver	7440-22-4	<5	n/a	ug/L					U	09/10/08
BLANK	Barium	7440-39-3	<4	n/a	ug/L					U	09/10/08
BLANK	Beryllium	7440-41-7	<4	n/a	ug/L					U	09/10/08
BLANK	Calcium	7440-70-2	<73	n/a	ug/L					U	09/10/08
BLANK	Cadmium	7440-43-9	<4	n/a	ug/L					U	09/10/08
BLANK	Cobalt	7440-48-4	<4	n/a	ug/L					U	09/10/08
BLANK	Chromium	7440-47-3	<13	n/a	ug/L					U	09/10/08
BLANK	Copper	7440-50-8	<6	n/a	ug/L					U	09/10/08
BLANK	Iron	7439-89-6	<25	n/a	ug/L					U	09/10/08
BLANK	Potassium	7440-09-7	<170	n/a	ug/L					U	09/10/08
BLANK	Magnesium	7439-95-4	<50	n/a	ug/L					U	09/10/08
BLANK	Manganese	7439-96-5	<4	n/a	ug/L					U	09/10/08
BLANK	Sodium	7440-23-5	<51	n/a	ug/L					U	09/10/08
BLANK	Nickel	7440-02-0	<4	n/a	ug/L					U	09/10/08
BLANK	Antimony	7440-36-0	<56	n/a	ug/L					U	09/10/08
BLANK	Strontium	7440-24-6	<4	n/a	ug/L					U	09/10/08
BLANK	Vanadium	7440-62-2	<12	n/a	ug/L					U	09/10/08
BLANK	Zinc	7440-66-6	<9	n/a	ug/L					U	09/10/08
LCS	Silver	7440-22-4	1041	104.100	% Recov	80.000	120.000				09/10/08
LCS	Barium	7440-39-3	490.5	98.100	% Recov	80.000	120.000				09/10/08
LCS	Beryllium	7440-41-7	559.1	111.820	% Recov	80.000	120.000				09/10/08
LCS	Calcium	7440-70-2	1189	118.900	% Recov	80.000	120.000				09/10/08
LCS	Cadmium	7440-43-9	1114	111.400	% Recov	80.000	120.000				09/10/08
LCS	Cobalt	7440-48-4	1081	108.100	% Recov	80.000	120.000				09/10/08
LCS	Chromium	7440-47-3	1043	104.300	% Recov	80.000	120.000				09/10/08
LCS	Copper	7440-50-8	1057	105.700	% Recov	80.000	120.000				09/10/08
LCS	Iron	7439-89-6	1016	101.600	% Recov	80.000	120.000				09/10/08
LCS	Potassium	7440-09-7	12200	122.000	% Recov	80.000	120.000				09/10/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081860
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
LCS	Magnesium	7439-95-4	1065	106.500	% Recov	80.000	120.000				09/10/08
LCS	Manganese	7439-96-5	1071	107.100	% Recov	80.000	120.000				09/10/08
LCS	Sodium	7440-23-5	1142	114.200	% Recov	80.000	120.000				09/10/08
LCS	Nickel	7440-02-0	1099	109.900	% Recov	80.000	120.000				09/10/08
LCS	Antimony	7440-36-0	1089	108.900	% Recov	80.000	120.000				09/10/08
LCS	Strontium	7440-24-6	537.8	107.560	% Recov	80.000	120.000				09/10/08
LCS	Vanadium	7440-62-2	1037	103.700	% Recov	80.000	120.000				09/10/08
LCS	Zinc	7440-66-6	1167	116.700	% Recov	80.000	120.000				09/10/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081860
Matrix: WATER
Test: ICP-200.8 MS All possible meta

Sample Date: 08/26/08
Receive Date:08/26/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P004214											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Uranium	7440-61-1	39.23	98.075	% Recov	70.000	130.000				09/15/08
MSD	Uranium	7440-61-1	39.88	99.700	% Recov	70.000	130.000				09/15/08
SPK-RPD	Uranium	7440-61-1	99.700		RPD			1.643	20.000		09/15/08
Lab ID: W08P004270											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Uranium	7440-61-1	44.466	111.165	% Recov	70.000	130.000				09/15/08
MSD	Uranium	7440-61-1	44.566	111.415	% Recov	70.000	130.000				09/15/08
SPK-RPD	Uranium	7440-61-1	111.415		RPD			0.225	20.000		09/15/08
BATCH QC											
BLANK	Uranium	7440-61-1	<5e-2	n/a	ug/L					U	09/15/08
BLANK	Uranium	7440-61-1	<5e-2	n/a	ug/L					U	09/15/08
LCS	Uranium	7440-61-1	40.32	100.800	% Recov	85.000	115.000				09/15/08
LCS	Uranium	7440-61-1	40.35	100.875	% Recov	85.000	115.000				09/15/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: **Inorganic**

SDG Number: WSCF20081860
Matrix: WATER
Test: Total Alkalinity as mg/L CaCO3

Sample Date: 08/27/08
Receive Date:08/27/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08GR03517											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Total Alkalinity as mg/L CaCO3	ALKALINITY	6561		RPD			2.929	20.000		09/03/08
Lab ID: W08P004191											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Total Alkalinity as mg/L CaCO3	ALKALINITY	157.5		RPD			4.651	20.000		09/03/08
BATCH QC											
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	32.40	108.725	%Recove	80.000	120.000				09/03/08
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	32.11	107.752	%Recove	80.000	120.000				09/03/08
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	31.73	106.477	%Recove	80.000	120.000				09/03/08
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	31.59	106.007	%Recove	80.000	120.000				09/03/08
LCS	Total Alkalinity as mg/L CaCO3	ALKALINITY	31.82	106.779	%Recove	80.000	120.000				09/03/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081860
Matrix: WATER
Test: Total Organic Carbon

Sample Date: 08/27/08
Receive Date:08/27/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P004241											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Total Organic Carbon	TOC	2.254	112.700	% Recov	75.000	125.000				09/10/08
MSD	Total Organic Carbon	TOC	2.217	110.850	% Recov	75.000	125.000				09/10/08
SPK-RPD	Total Organic Carbon	TOC	110.850		RPD			1.655	20.000		09/10/08
BATCH QC											
BLANK	Total Organic Carbon	TOC	<0.045	n/a	mg/L	0.000	300.000			U	09/10/08
METHSPIKE	Total Organic Carbon	TOC	2.175	108.750	% Recov	80.000	120.000				09/10/08
SPK-RSD	Total Organic Carbon	TOC	0.5180	0.518	% RSD	0.000	20.000				09/10/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Inorganic

SDG Number: WSCF20081860
Matrix: WATER
Test: Total Organic Halides

Sample Date: 08/27/08
Receive Date:08/27/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P004241											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Total Organic Halides	TOX	43.1	107.750	% Recov	50.000	150.000				09/15/08
MSD	Total Organic Halides	TOX	43.6	109.000	% Recov	50.000	150.000				09/15/08
SPK-RPD	Total Organic Halides	TOX	109.000		RPD			1.153	20.000		09/15/08
Lab ID: W08P004291											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Total Organic Halides	TOX	40.6	101.500	% Recov	50.000	150.000				09/15/08
MSD	Total Organic Halides	TOX	41.5	103.750	% Recov	50.000	150.000				09/15/08
SPK-RPD	Total Organic Halides	TOX	103.750		RPD			2.192	20.000		09/15/08
Lab ID: W08P004315											
BATCH QC ASSOCIATED WITH SAMPLE											
MS	Total Organic Halides	TOX	44.7	111.750	% Recov	50.000	150.000				09/15/08
MSD	Total Organic Halides	TOX	45.7	114.250	% Recov	50.000	150.000				09/15/08
SPK-RPD	Total Organic Halides	TOX	114.250		RPD			2.212	20.000		09/15/08
BATCH QC											
BLANK	Total Organic Halides	TOX	<5	n/a	ug/L	0.000	300.000			U	09/15/08
LCS	Total Organic Halides	TOX	424	106.000	%rec	80.000	120.000				09/15/08

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent E6-35

Group #: WSCF20081860
Department: Inorganic

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		ICP-AES: [Samples W08P4239-4240] No zirconium is present in the LCS standard. Magnesium, sodium, and calcium sample results exceed spiking level by a factor of 4 so spike recoveries are not valid. Check standard used to ensure magnesium, sodium, and calcium linearity because sample results are greater than the calibration standard. High potassium LCS recovery; "X" flag. Low silver spike recoveries; "N" flag. ICP-AES: B flag used for samples < 5X MDL Anions: Fluoride DUP RPD is acceptable because sample and DUP are < 10X MDL VOA: High level of acetone in blank due to carryover from waste sample; acetone was not detected in customer sample. MS 9/25/08

Lab Areas: VALGROUP - Group Validation
LOGSAMP - Login for Sample
VALTEST - Test Validation
LOGTEST - Login for Tests
TESTDATA - Test Data Entry

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-053
Sample # W08P004245
Client ID: B1WDW3 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081860
Department: Organic
Sampled: 08/27/08
Received: 08/27/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
VOA Ground Water Protection											
1,1-Dichloroethene	75-35-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08
Trichloroethene	79-01-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08
Benzene	71-43-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08
Toluene	108-88-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08
Chlorobenzene	108-90-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08
1,1-Dichloroethane	75-34-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08
Ethylbenzene	100-41-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08
1,2-Dichloroethane	107-06-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08
4-Methyl-2-Pentanone	108-10-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08
Tetrachloroethene	127-18-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08
Xylenes (total)	1330-20-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08
Carbon tetrachloride	56-23-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08
Acetone	67-64-1	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08
Chloroform	67-66-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08
1,1,1-Trichloroethane	71-55-6	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08
Vinyl chloride	75-01-4	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08
Methylenechloride	75-09-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08
Carbon disulfide	75-15-0	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08
2-Butanone	78-93-3	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08
1,1,2-Trichloroethane	79-00-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08
1-Butanol	71-36-3	LA-523-455	U	< 100	ug/L			1.00	1.0e+02		09/08/08
Tetrahydrofuran	109-99-9	LA-523-455	U	< 2.00	ug/L			1.00	2.0		09/08/08
trans-1,2-Dichloroethylene	156-60-5	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08
cis-1,2-Dichloroethylene	156-59-2	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

B - The analyte < the RDL but >= the IDL/MDL (inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.(org)
D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-053
Sample # W08P004245
Client ID: B1WDW3 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081860
Department: Organic
Sampled: 08/27/08
Received: 08/27/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Ethyl cyanide	107-12-0	LA-523-455	U	< 2.00	ug/L			1.00	2.0		09/08/08
1,4-Dichlorobenzene	106-46-7	LA-523-455	U	< 1.00	ug/L			1.00	1.0		09/08/08

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

B - The analyte < the RDL but >= the IDL/MDL (inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.(org)

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081860
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 08/25/08
Receive Date:08/25/08

Lab ID: W08P004198
BATCH QC ASSOCIATED WITH SAMPLE

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
MS	1,1-Dichloroethene	75-35-4	24.260	97.000	% Recov	63.000	117.000				09/08/08
MS	Benzene	71-43-2	23.900	95.600	% Recov	75.000	129.000				09/08/08
MS	4-Bromofluorobenzene(Surr)	460-00-4	46.810	93.600	% Recov	75.000	125.000				09/08/08
MS	Chlorobenzene	108-90-7	25.060	100.000	% Recov	79.000	119.000				09/08/08
MS	1,2-Dichloroethane-d4(Surr)	17060-07-0	52.160	104.000	% Recov	75.000	125.000				09/08/08
MS	Toluene-d8(Surr)	2037-26-5	47.050	94.100	% Recov	75.000	125.000				09/08/08
MS	Toluene	108-88-3	24.640	98.600	% Recov	76.000	120.000				09/08/08
MS	Trichloroethene	79-01-6	20.220	80.900	% Recov	73.000	123.000				09/08/08
MSD	1,1-Dichloroethene	75-35-4	22.900	91.600	% Recov	63.000	117.000				09/08/08
MSD	Benzene	71-43-2	23.620	94.500	% Recov	75.000	129.000				09/08/08
MSD	4-Bromofluorobenzene(Surr)	460-00-4	46.900	93.800	% Recov	75.000	125.000				09/08/08
MSD	Chlorobenzene	108-90-7	25.010	100.000	% Recov	79.000	119.000				09/08/08
MSD	1,2-Dichloroethane-d4(Surr)	17060-07-0	52.750	106.000	% Recov	75.000	125.000				09/08/08
MSD	Toluene-d8(Surr)	2037-26-5	47.100	94.200	% Recov	75.000	125.000				09/08/08
MSD	Toluene	108-88-3	24.460	97.800	% Recov	76.000	120.000				09/08/08
MSD	Trichloroethene	79-01-6	20.500	82.000	% Recov	73.000	123.000				09/08/08
SPK-RPD	1,1-Dichloroethene	75-35-4	91.600		RPD			5.726	20.000		09/08/08
SPK-RPD	Benzene	71-43-2	94.500		RPD			1.157	20.000		09/08/08
SPK-RPD	4-Bromofluorobenzene(Surr)	460-00-4	93.800		RPD			0.213	20.000		09/08/08
SPK-RPD	Chlorobenzene	108-90-7	100.000		RPD			0.000	20.000		09/08/08
SPK-RPD	1,2-Dichloroethane-d4(Surr)	17060-07-0	106.000		RPD			1.905	20.000		09/08/08
SPK-RPD	Toluene-d8(Surr)	2037-26-5	94.200		RPD			0.106	20.000		09/08/08
SPK-RPD	Toluene	108-88-3	97.800		RPD			0.815	20.000		09/08/08
SPK-RPD	Trichloroethene	79-01-6	82.000		RPD			1.351	20.000		09/08/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081860
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date: 08/27/08
Receive Date:08/27/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P004245											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	4-Bromofluorobenzene(Surr)	460-00-4	46.170	92.300	% Recov	75.000	125.000				09/08/08
SURR	1,2-Dichloroethane-d4(Surr)	17060-07-0	52.700	105.000	% Recov	75.000	125.000				09/08/08
SURR	Toluene-d8(Surr)	2037-26-5	48.020	96.000	% Recov	75.000	125.000				09/08/08
BATCH QC											
BLANK	1,1-Dichloroethane	75-34-3	< 1.0	n/a	ug/L					U	09/08/08
BLANK	1,1,1-Trichloroethane	71-55-6	< 1.0	n/a	ug/L					U	09/08/08
BLANK	1,1,2-Trichloroethane	79-00-5	< 1.0	n/a	ug/L					U	09/08/08
BLANK	1,1-Dichloroethene	75-35-4	< 1.0	n/a	ug/L					U	09/08/08
BLANK	1,2-Dichloroethane	107-06-2	< 1.0	n/a	ug/L					U	09/08/08
BLANK	1,4-Dichlorobenzene	106-46-7	< 1.0	n/a	ug/L					U	09/08/08
BLANK	1-Butanol	71-36-3	< 100	n/a	ug/L					U	09/08/08
BLANK	4-Methyl-2-Pentanone	108-10-1	< 1.0	n/a	ug/L					U	09/08/08
BLANK	Acetone	67-64-1	460	460.000	ug/L						09/08/08
BLANK	Benzene	71-43-2	< 1.0	n/a	ug/L					U	09/08/08
BLANK	4-Bromofluorobenzene(Surr)	460-00-4	46.720	93.400	% Recov	75.000	125.000				09/08/08
BLANK	Carbon disulfide	75-15-0	< 1.0	n/a	ug/L					U	09/08/08
BLANK	Carbon tetrachloride	56-23-5	< 1.0	n/a	ug/L					U	09/08/08
BLANK	Chloroform	67-66-3	< 1.0	n/a	ug/L					U	09/08/08
BLANK	Chlorobenzene	108-90-7	< 1.0	n/a	ug/L					U	09/08/08
BLANK	cis-1,2-Dichloroethylene	156-59-2	< 1.0	n/a	ug/L					U	09/08/08
BLANK	1,2-Dichloroethane-d4(Surr)	17060-07-0	52.850	106.000	% Recov	75.000	125.000				09/08/08
BLANK	trans-1,2-Dichloroethylene	156-60-5	< 1.0	n/a	ug/L					U	09/08/08
BLANK	Ethylbenzene	100-41-4	< 1.0	n/a	ug/L					U	09/08/08
BLANK	Ethyl cyanide	107-12-0	< 2.0	n/a	ug/L					U	09/08/08
BLANK	2-Butanone	78-93-3	< 1.0	n/a	ug/L					U	09/08/08
BLANK	Methylenechloride	75-09-2	3.8	3.800	ug/L						09/08/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Organic

SDG Number: WSCF20081860
Matrix: WATER
Test: VOA Ground Water Protection

Sample Date:
Receive Date:

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
BLANK	Tetrachloroethene	127-18-4	< 1.0	n/a	ug/L					U	09/08/08
BLANK	Xylenes (total)	1330-20-7	< 1.0	n/a	ug/L	0.000	5.000			U	09/08/08
BLANK	Tetrahydrofuran	109-99-9	< 2.0	n/a	ug/L					U	09/08/08
BLANK	Toluene-d8(Surr)	2037-26-5	47.260	94.500	% Recov	75.000	125.000				09/08/08
BLANK	Toluene	108-88-3	< 1.0	n/a	ug/L					U	09/08/08
BLANK	Trichloroethene	79-01-6	< 1.0	n/a	ug/L					U	09/08/08
BLANK	Vinyl chloride	75-01-4	< 1.0	n/a	ug/L					U	09/08/08
LCS	1,1-Dichloroethene	75-35-4	22.820	91.300	% Recov	75.000	125.000				09/08/08
LCS	Benzene	71-43-2	24.640	98.600	% Recov	75.000	125.000				09/08/08
LCS	4-Bromofluorobenzene(Surr)	460-00-4	45.760	91.500	% Recov	75.000	125.000				09/08/08
LCS	Chlorobenzene	108-90-7	25.500	102.000	% Recov	75.000	125.000				09/08/08
LCS	1,2-Dichloroethane-d4(Surr)	17060-07-0	52.240	104.000	% Recov	75.000	125.000				09/08/08
LCS	Toluene-d8(Surr)	2037-26-5	47.340	94.700	% Recov	75.000	125.000				09/08/08
LCS	Toluene	108-88-3	24.970	99.900	% Recov	75.000	125.000				09/08/08
LCS	Trichloroethene	79-01-6	21.070	84.300	% Recov	75.000	125.000				09/08/08

WSCF
ANALYTICAL COMMENT REPORT

Attention: Steve Trent E6-35

Group #: WSCF20081860
Department: Organic

Sample #	Client ID	Lab Area	Test	Comment
		VALGROUP		ICP-AES: [Samples W08P4239-4240] No zirconium is present in the LCS standard. Magnesium, sodium, and calcium sample results exceed spiking level by a factor of 4 so spike recoveries are not valid. Check standard used to ensure magnesium, sodium, and calcium linearity because sample results are greater than the calibration standard. High potassium LCS recovery; "X" flag. Low silver spike recoveries; "N" flag. ICP-AES: B flag used for samples < 5X MDL Anions: Fluoride DUP RPD is acceptable because sample and DUP are < 10X MDL VOA: High level of acetone in blank due to carryover from waste sample; acetone was not detected in customer sample. MS 9/25/08

Lab Areas: VALGROUP - Group Validation
LOGSAMP - Login for Sample
VALTEST - Test Validation
LOGTEST - Login for Tests
TESTDATA - Test Data Entry

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WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: A08-007
Sample # W08P004238
Client ID: B1W1D9 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081860
Department: Radiochemistry
Sampled: 08/27/08
Received: 08/27/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
TC99 by Liquid Scin.											
Tc-99 by Liquid Scin.	14133-76-7	LA-508-421		300	pCi/L	+-3.00	pCi/L	1.00	5.5		09/10/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421		1.60e+03	pCi/L	+-368	pCi/L	1.00	2.4e+02		09/12/08

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

B - The analyte < the RDL but > = the IDL/MDL (inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.(org)

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF
ANALYTICAL RESULTS REPORT

Attention: Steve Trent E6-35
SAF Number: I08-053
Sample # W08P004245
Client ID: B1WDW3 GPP-PNNL WSCF TRENT **Matrix:** WATER

Group #: WSCF20081860
Department: Radiochemistry
Sampled: 08/27/08
Received: 08/27/08

Test Performed	CAS #	Method	RQ	Result	Unit	TP Err	Unit	DF	MDL	PQL	Analysis Date
Strontium 89/90											
Strontium-89/90	SR-RAD	LA-508-415		1.60	pCi/L	+-2.51	pCi/L	1.00	1.0		09/14/08
Sr-85 Tracer by Beta Counting	SR85	LA-508-415		81.7	Percent			1.00	0.0		09/14/08
TC99 by Liquid Scin.											
Tc-99 by Liquid Scin.	14133-76-7	LA-508-421		34.0	pCi/L	+-7.82	pCi/L	1.00	5.5		09/10/08
Tritium by Liq Sct column prep											
Tritium	10028-17-8	LA-508-421		2.90e+05	pCi/L	+-5.80e+04	pCi/L	1.00	2.4e+02		09/12/08

MDL=Minimum Detection Limit
RQ=Result Qualifier
TP Err=Total Propagated Error
DF=Dilution Factor

B - The analyte < the RDL but > = the IDL/MDL (inorg)
N - Spike sample recovery is outside control limits.(inorg)
U - Analyzed for but not detected above limiting criteria.(org)

D - Analyte was identified at a secondary dilution factor(inorg)
U - Analyzed for but not detected above limiting criteria(inorg)
X - Other flags/notes described in the comments/narrative(inorg)

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20081860
Matrix: WATER
Test: Strontium 89/90

Sample Date: 08/20/08
Receive Date:08/20/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P004155											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Sr-85 Tracer by Beta Counting	SR85	90	90.000	% Recov	30.000	105.000				09/14/08
DUP	Strontium-89/90	SR-RAD	U-1.9		RPD			n/a	20.000		09/14/08
Lab ID: W08P004245											
BATCH QC ASSOCIATED WITH SAMPLE											
SURR	Sr-85 Tracer by Beta Counting	SR85	81.7	81.700	% Recov	30.000	105.000				09/14/08
BATCH QC											
BLANK	Sr-85 Tracer by Beta Counting	SR85	90.0	90.000	% Recov	30.000	105.000				09/14/08
BLANK	Strontium-89/90	10098-97-2	U-1.3	n/a	pCi/L	-10.000	100.000				09/14/08
LCS	Sr-85 Tracer by Beta Counting	SR85	91.5	91.500	% Recov	30.000	105.000				09/14/08
LCS	Strontium-89/90	10098-97-2	147.0	105.885	% Recov	80.000	120.000				09/14/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20081860
Matrix: WATER
Test: TC99 by Liquid Scin.

Sample Date: 08/26/08
Receive Date:08/26/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P004212											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tc-99 by Liquid Scin.	14133-76-7	U-0.8		RPD			n/a	20.000		09/10/08
MS	Tc-99 by Liquid Scin.	14133-76-7	660.4	103.732	% Recov	75.000	125.000				09/10/08
BATCH QC											
BLANK	Tc-99 by Liquid Scin.	14133-76-7	U2.0	n/a	pCi/L	-10.000	10.000				09/10/08
LCS	Tc-99 by Liquid Scin.	14133-76-7	166.6	104.648	% Recov	80.000	120.000				09/10/08

WSCF ANALYTICAL LABORATORY QC REPORT

Department: Radiochemistry

SDG Number: WSCF20081860
Matrix: WATER
Test: Tritium by Liq Sct column prep

Sample Date: 08/26/08
Receive Date:08/26/08

QC Type	Analyte	CAS #	QC Found	QC Yield	Units	Lower Limit	Upper Limit	RPD(%)	RPD Limit	RQ	Analysis Date
Lab ID: W08P004210											
BATCH QC ASSOCIATED WITH SAMPLE											
DUP	Tritium	10028-17-8	1.1E+03		RPD			8.696	20.000		09/12/08
MS	Tritium	10028-17-8	20310	90.325	% Recov	75.000	125.000				09/12/08
BATCH QC											
BLANK	Tritium	10028-17-8	U-7.2E+01	n/a	pCi/L	-10.000	1000.000				09/12/08
LCS	Tritium	10028-17-8	3110.0	91.816	% Recov	80.000	120.000				09/12/08

M4W41-SLF-08-1091

ATTACHMENT 4

SAMPLE RECEIPT INFORMATION

Consisting of 5 pages
Including cover page

Waste Sampling and Characterization Facility
P.O. BOX 1970 S3-30, Richland, WA 99352
PHONE: (509) 373-7004/FAX: (509) 373-7134

File
9/24/08

ACKNOWLEDGMENT OF SAMPLES RECEIVED

GPAP

Richland, WA 99352
Attn: Steve Trent E6-35

Customer Code: PNNL-GPP
PO#: 122543
Group#: 20081860

The following samples were received from you on 08/27/08. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

Sample#	Sample Id	Tests Scheduled	Matrix	Sample Date
W08P004238	B1W1D9	GPP-PNNL TRENT @2008 @H3-33 @TC99-30	Water	08/27/08
W08P004239	B1W2F4	GPP-PNNL TRENT @GPP6010	Water	08/27/08
W08P004240	B1W2F5	GPP-PNNL TRENT @GPP6010 @IC-30 ALKALI	Water	08/27/08
W08P004241	B1W2W8	GPP TRENT TOC-30 TOX	Water	08/27/08
W08P004242	B1W2W9	GPP-PNNL TRENT TOC-30 TOX	Water	08/27/08
W08P004243	B1W361	GPP-PNNL TRENT TOC-30 TOX	Water	08/27/08
W08P004244	B1W362	GPP-PNNL TRENT TOC-30 TOX	Water	08/27/08
W08P004245	B1WDW3	GPP-PNNL TRENT @2008 @H3-33 @IC-30 @SR89_90 @TC99-30 @VOA-GPP	Water	08/27/08

Test Acronym Description

Test Acronym	Description
@2008	ICP-200.8 MS All possible meta
@GPP6010	ICP Metals Analysis, Grd H20 P
@H3-33	Tritium by Liq Sct column prep
@IC-30	Anions by Ion Chromatography
@SR89_90	Strontium 89/90
@TC99-30	TC99 by Liquid Scin.
@VOA-GPP	VOA Ground Water Protection
ALKALI	Total Alkalinity as mg/L CaCO3
TOC-30	Total Organic Carbon
TOX	Total Organic Halides

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

A08-007-2

Page 1 of 1

Collector Ray Shepard, Fluor Hanford	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. A08-007	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title LLWMA(4) - PA, JULY 2008	HNF-N-506-14	**Ice Chest No.** 100-KR-4 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol Other 20081860	**Priority:** 30 Days **PRIORITY**	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
200 Area Generator Knowledge Information Form applies.

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1W1D9	W08P004238	W	8-27-08	1044	1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2
B1W1D9		W	↓	↓	1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2
B1W1D9		W	↓	↓	1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None

ICED

Relinquished By Ray Shepard, Fluor Hanford — Print — Sign — Date/Time AUG 27 2008 1400	Received By Victor Bins — Print — Sign — Date/Time AUG 27 2008 1400	Matrix *
Relinquished By — Date/Time	Received By — Date/Time	S = Soil, SF = Sediment, SO = Solid, SL = Sludge, W = Water, O = Oil, A = Air, DS = Drum Solid, DL = Drum Liquid, T = Tissue, WI = Wine, L = Liquid, V = Vegetation, X = Other
Relinquished By — Date/Time	Received By — Date/Time	
Relinquished By — Date/Time	Received By — Date/Time	

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) — Disposed By — Date/Time

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

W08-007-88

Collector Roy Shepard Fluor Hanford	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. W08-007	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title RCRA JULY 2008	HNF-N-506-14	**Ice Chest No.** 100 KR-4 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol RCRA	**Priority:** 30 Days **PRIORITY**	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
Site-Wide Generator Knowledge Information Form applies.

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1W2F4 (F) W	8004239	W	8-27-08	1044	1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1W2F5	4240	W			1x250-mL G/P	2320_ALKALINITY: Alkalinity (1)	Cool~4C
B1W2F5		W			1x500-mL G/P	6010_METALS_ICP: List-3 (18)	HNO3 to pH <2
B1W2F5		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1W2W8	4241	W			1x1000-mL aGs*	9020_TOX: TOX (1)	H2SO4 to pH <2 Cool~4C
B1W2W8		W			1x250-mL aGs*	9060_TOC: TOC (1)	HCl or H2SO4 to pH <2 Cool~4C
B1W2W9	4242	W			1x1000-mL aGs*	9020_TOX: TOX (1)	H2SO4 to pH <2 Cool~4C
B1W2W9		W			1x250-mL aGs*	9060_TOC: TOC (1)	HCl or H2SO4 to pH <2 Cool~4C
B1W361	4243	W			1x1000-mL aGs*	9020_TOX: TOX (1)	H2SO4 to pH <2 Cool~4C
B1W361		W			1x250-mL aGs*	9060_TOC: TOC (1)	HCl or H2SO4 to pH <2 Cool~4C
B1W362	4244	W			1x1000-mL aGs*	9020_TOX: TOX (1)	H2SO4 to pH <2 Cool~4C
B1W362		W			1x250-mL aGs*	9060_TOC: TOC (1)	HCl or H2SO4 to pH <2 Cool~4C

ICED

Relinquished By (Print / Sign)	Date/Time	Received By (Print / Sign)	Date/Time
Roy Shepard Fluor Hanford	AUG 27 2008 1400	Vicka Bins	AUG 27 2008 1400
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liquid	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wipe	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

FLUOR HANFORD

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

I08-053-106

Collector RM Arnold	**Contact/Requester** Steve Trent	**Telephone No.** 509-373-5869 **MSIN** **FAX**
SAF No. I08-053	**Sampling Origin** Hanford Site	**Purchase Order/Charge Code**
Project Title 2UP1 AUGUST 2008	HNF-N-506-17	**Ice Chest No.** AWS-008 **Temp.**
Shipped To (Lab) Waste Sampling & Characterization	**Method of Shipment** Govt. Vehicle	**Bill of Lading/Air Bill No.**
Protocol SURV	**Priority:** 30 Days **PRIORITY**	**Offsite Property No.**

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993) All Samples filtered per Project Scientist

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
200 Area Generator Knowledge Information Form applies.

Sample No.	Lab ID	*	Date	Time	No/Type Container	Sample Analysis	Preservative
B1WDW3	L08P00424S	W	8/27/08	1215	4x40-mL aGs*	8260_VOA_GCMS: List-2 (25)	HCl or H2SO4 to pH <2 Cool~4C
B1WDW3		W			1x500-mL P	300.0_ANIONS_IC: List-1 (5)	Cool~4C
B1WDW3		W			1x1000-mL G/P	TC99_3MDSK_LSC: Tc-99 (1)	HCl to pH <2
B1WDW3		W			1x250-mL G	TRITIUM_EIE_LSC: Tritium (1)	None
B1WDW3		W			1x500-mL G/P	200.8_METALS_ICPMS: Uranium (1)	HNO3 to pH <2
B1WDW3		W			1x1-L G/P	Strontium-89,90 -- Total Sr	HNO3 to pH <2

ICED

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
RM Arnold	RM Arnold	AUG 27 2008 1445	Anthony Stafford	Anthony Stafford	AUG 27 2008 1445
Relinquished By		Date/Time	Received By		Date/Time
Relinquished By		Date/Time	Received By		Date/Time
Relinquished By		Date/Time	Received By		Date/Time

Matrix *

S = Soil		DS = Drum Solid	
SE = Sediment		DL = Drum Liqui	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wine	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time